Stoller
Hanford Office

DOE-EM/GJ1098-2006

299-W15-214 (A7512)
Log Data Report

Borehole Information:

Borehole: 299-W15-214 (A7512)			**Site:** 216-Z-8 French Drain		
Coordinates (WA St Plane)		**GWL[1] (ft) :** None		**GWL Date:**	11/21/05
North	**East**	**Drill Date**	**Elevation (ft) (TOC)**	**Total Depth (ft)**	**Type**
135652.679	566652.791	07/85	677.0	15	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded steel	4.2	8 5/8	8	5/16	4.2	15

Borehole Notes:

Casing diameter and stickup measurements were acquired using a caliper and steel tape. Logging data acquisition is referenced to the top of casing (TOC).

Spectral Gamma Logging System (SGLS) Equipment Information:

Logging System: Gamma 4E		**Type:** SGLS (70%) SN: 34TP40587A
Effective Calibration Date: 12/21/04	**Calibration Reference:**	DOE/EM-GJ854-2005
	Logging Procedure:	MAC-HGLP 1.6.5, Rev. 0

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	**1**	**2 Repeat**			
Date	11/22/05	11/22/05			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	14.5	10.5			
Finish Depth (ft)	4.5	7.5			
Count Time (sec)	100	100			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A[2]	N/A			
Pre-Verification	DE001CAB	DE001CAB			
Start File	DE001000	DE001011			
Finish File	DE001010	DE001014			
Post-Verification	DE021CAA	DE021CAA			
Depth Return Error (in.)	0	0			
Comments	No fine-gain	No fine-gain			

Log Run	1	2 Repeat			
	adjustment	adjustment			

Logging Operation Notes:

Logging was conducted with a centralizer on the sonde. A repeat section was collected to evaluate the logging system's performance.

Analysis Notes:

Analyst:	Henwood	Date:	12/27/05	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre-run and post-run verifications for the logging systems were performed before and after the day's data acquisition. Acceptance criteria were met.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated using the EXCEL worksheet template identified as G4EApr05.xls. A casing correction for 0.3125-in.-thick casing was applied to the SGLS data. No corrections for dead time or water were required.

Results and Interpretations:

^{137}Cs was detected by the SGLS during logging of this borehole between 7 and 11 ft near its MDL of approximately 0.2 pCi/g.

The Westinghouse Hanford Company logged this borehole in 1995 with the Radionuclide Logging System (RLS). A comparison with the current SGLS log data suggests no significant changes in ^{137}Cs concentrations since 1995.

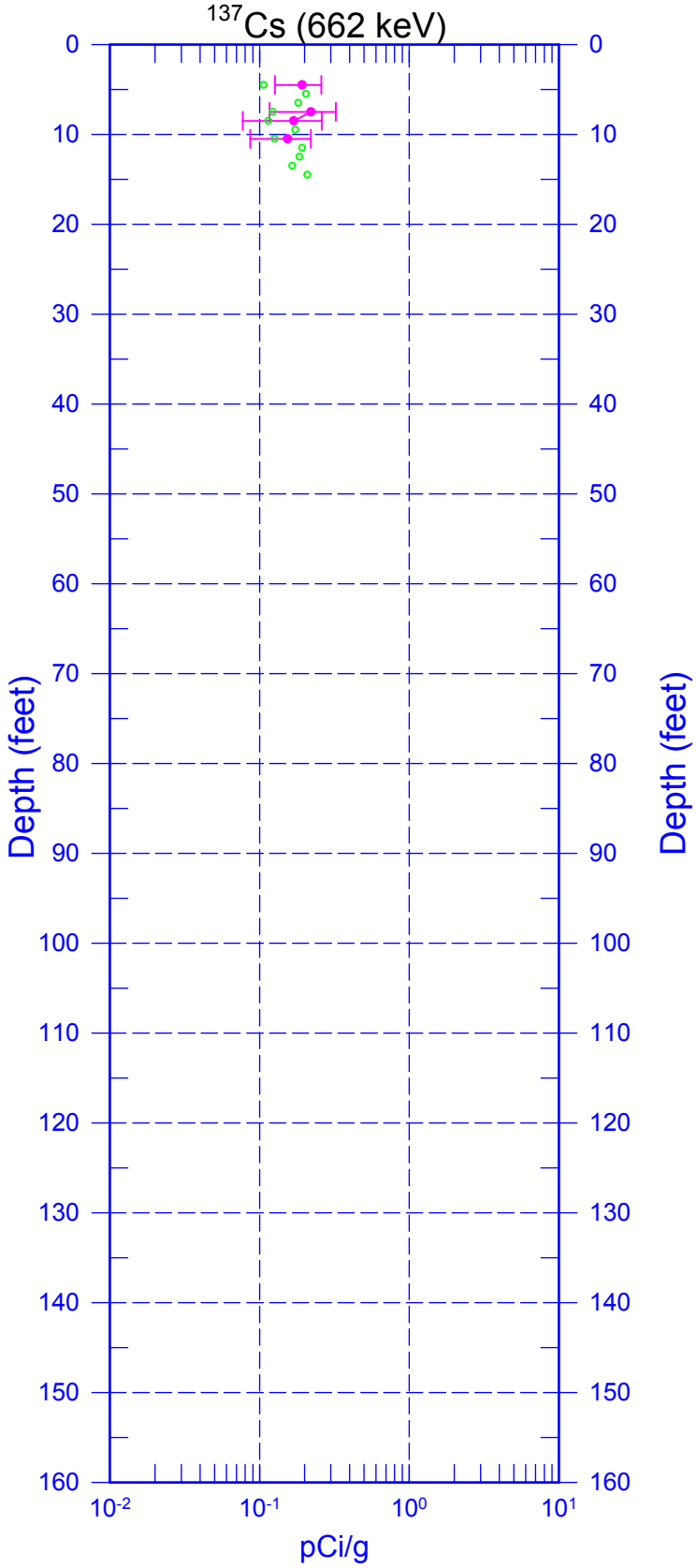
The repeat sections for the SGLS indicate good agreement for the naturally occurring and man-made radionuclides.

List of Plots:

Man-Made Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma and Dead Time
Man-Made Radionuclides RLS/SGLS Comparison
Repeat Section of Man-Made Radionuclides
Repeat Section of Natural Gamma Logs

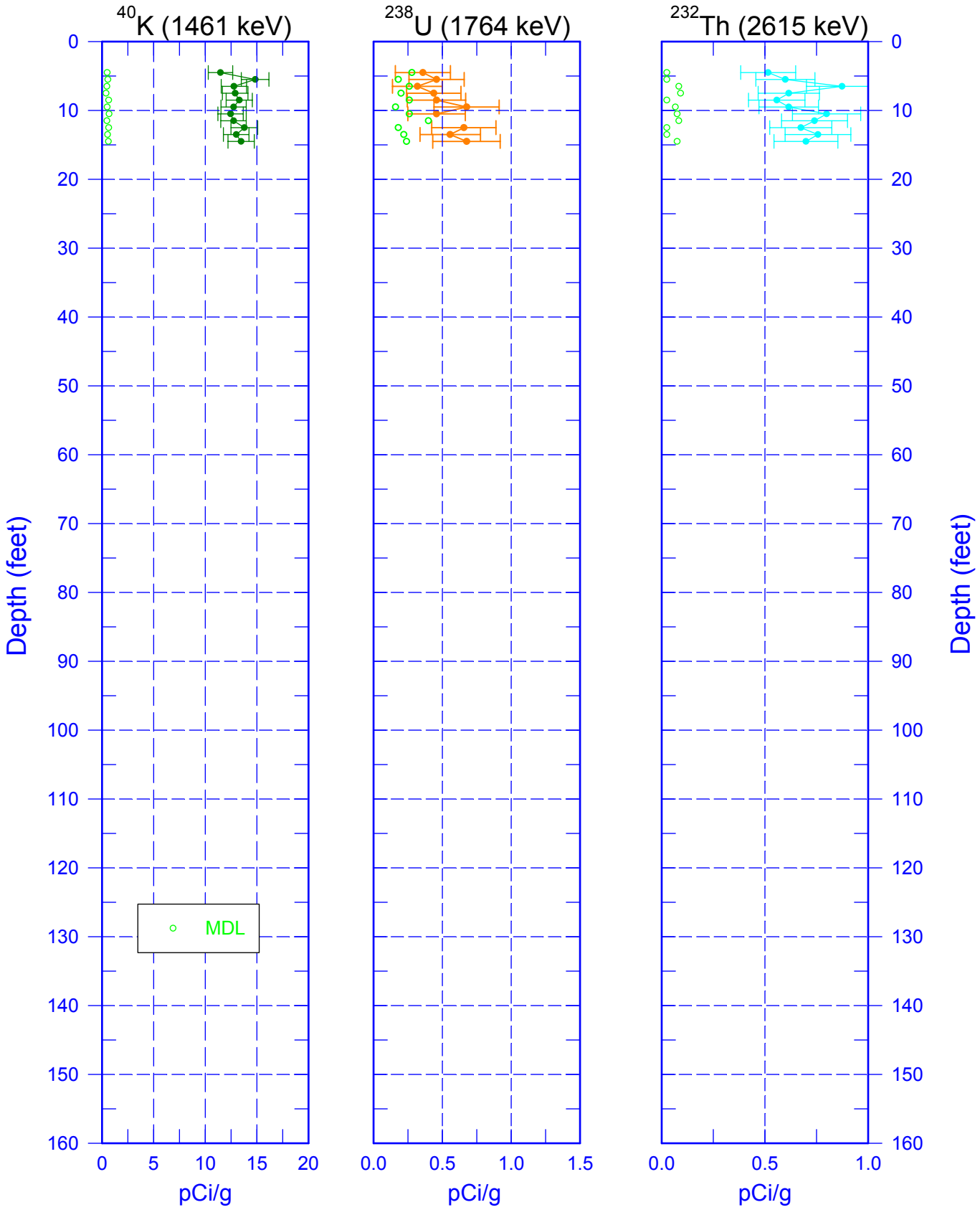
[1] GWL – groundwater level
[2] N/A – not applicable

299-W15-214 (A7512)
Man-Made Radionuclides



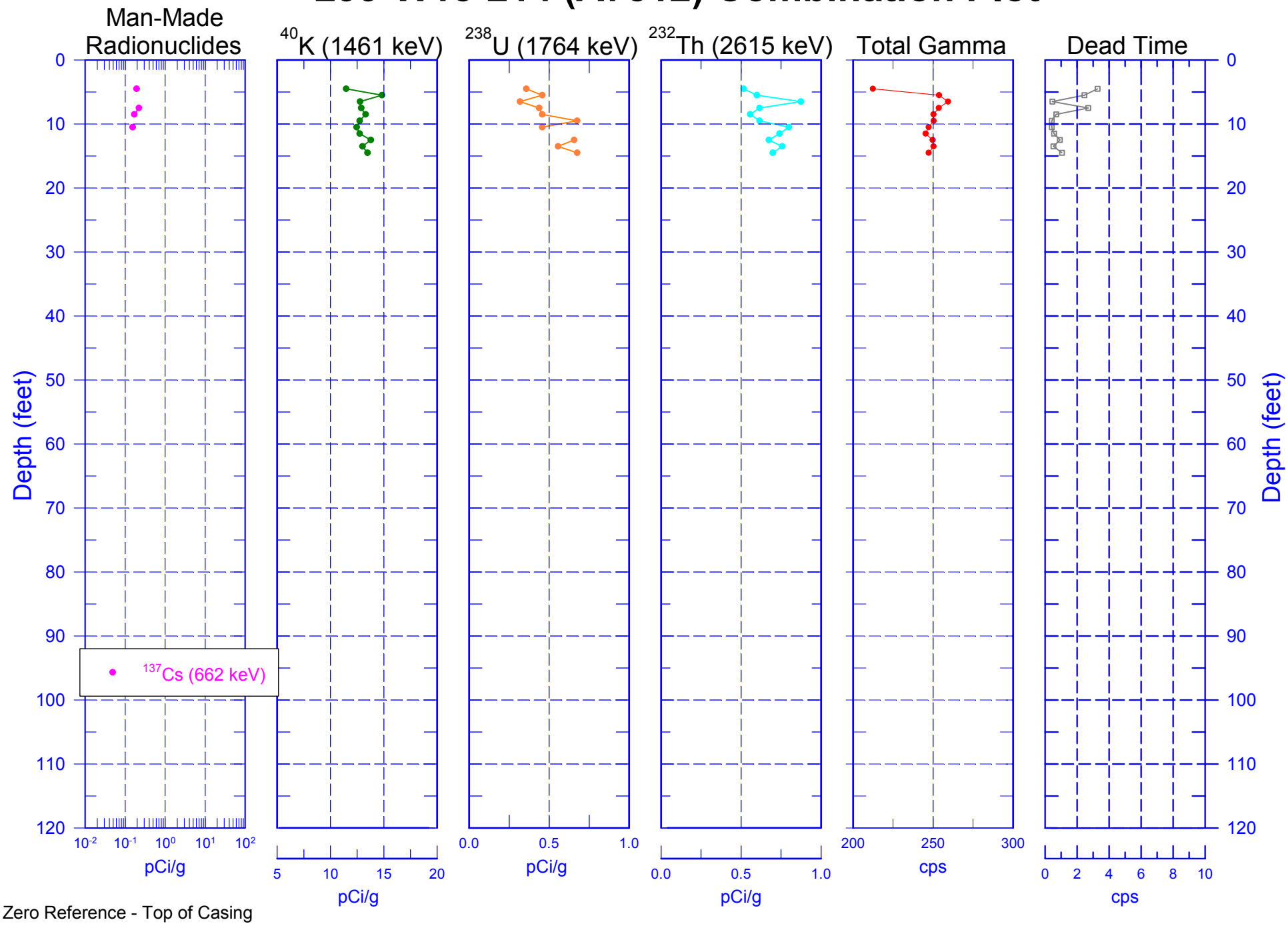
Zero Reference - Top of Casing

299-W15-214 (A7512)
Natural Gamma Logs



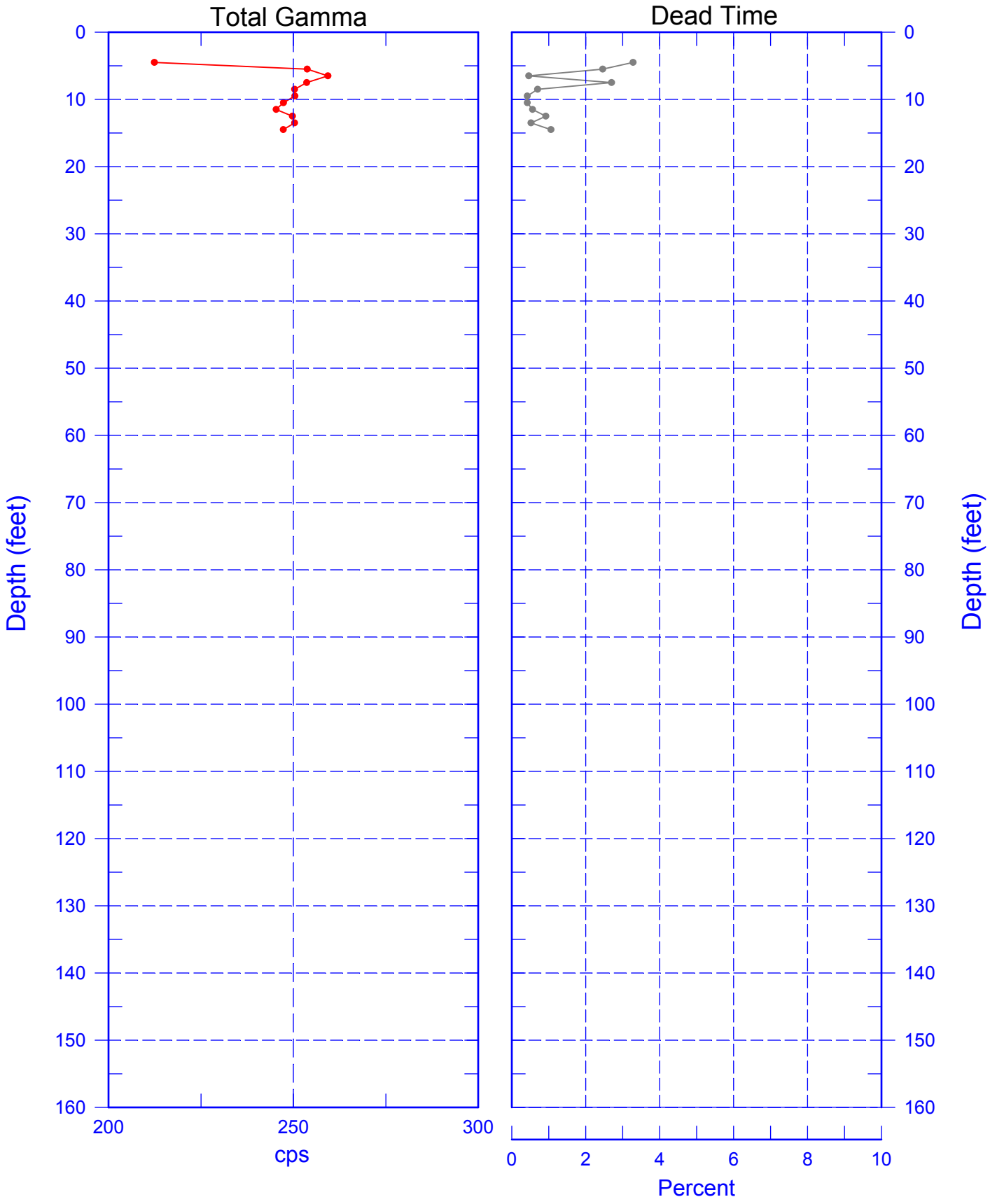
Zero Reference = Top of Casing

299-W15-214 (A7512) Combination Plot



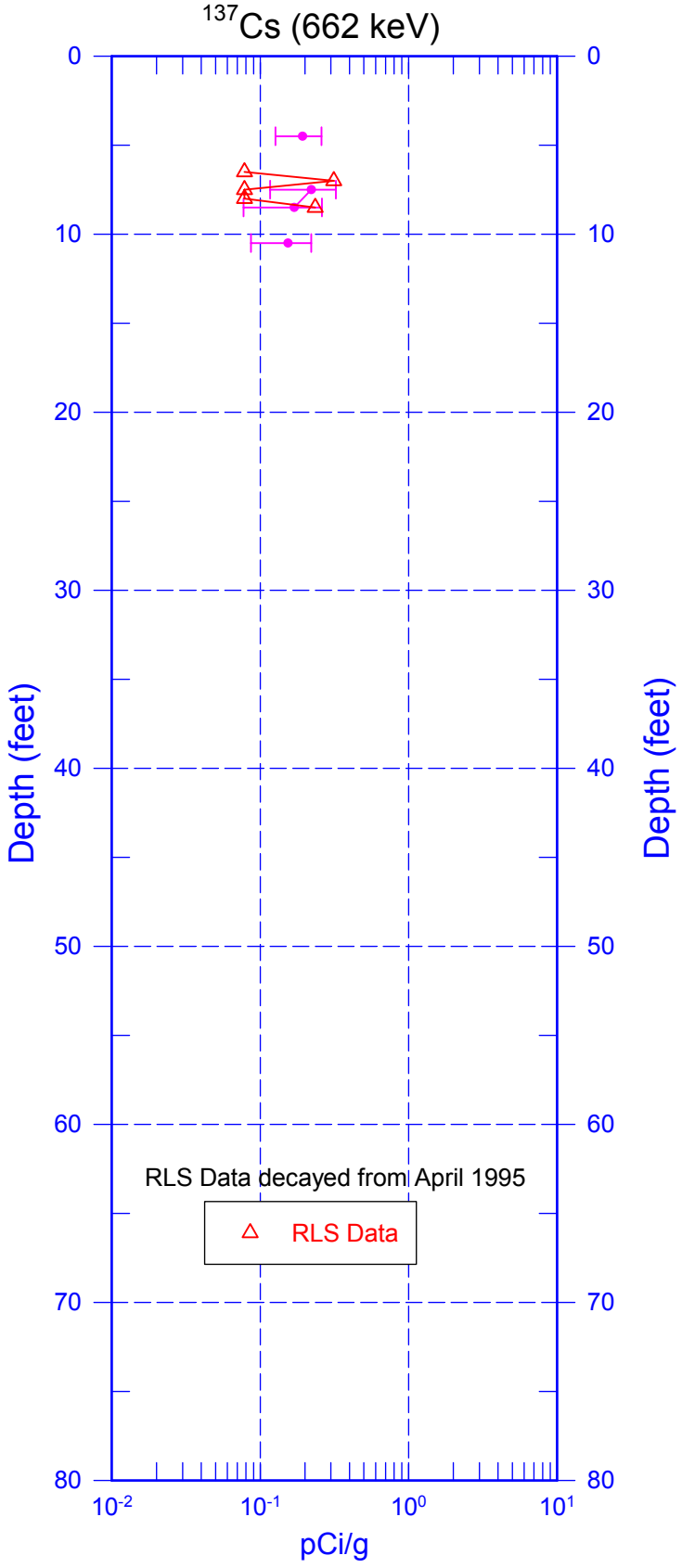
Zero Reference - Top of Casing

299-W15-214 (A7512)
Total Gamma & Dead Time



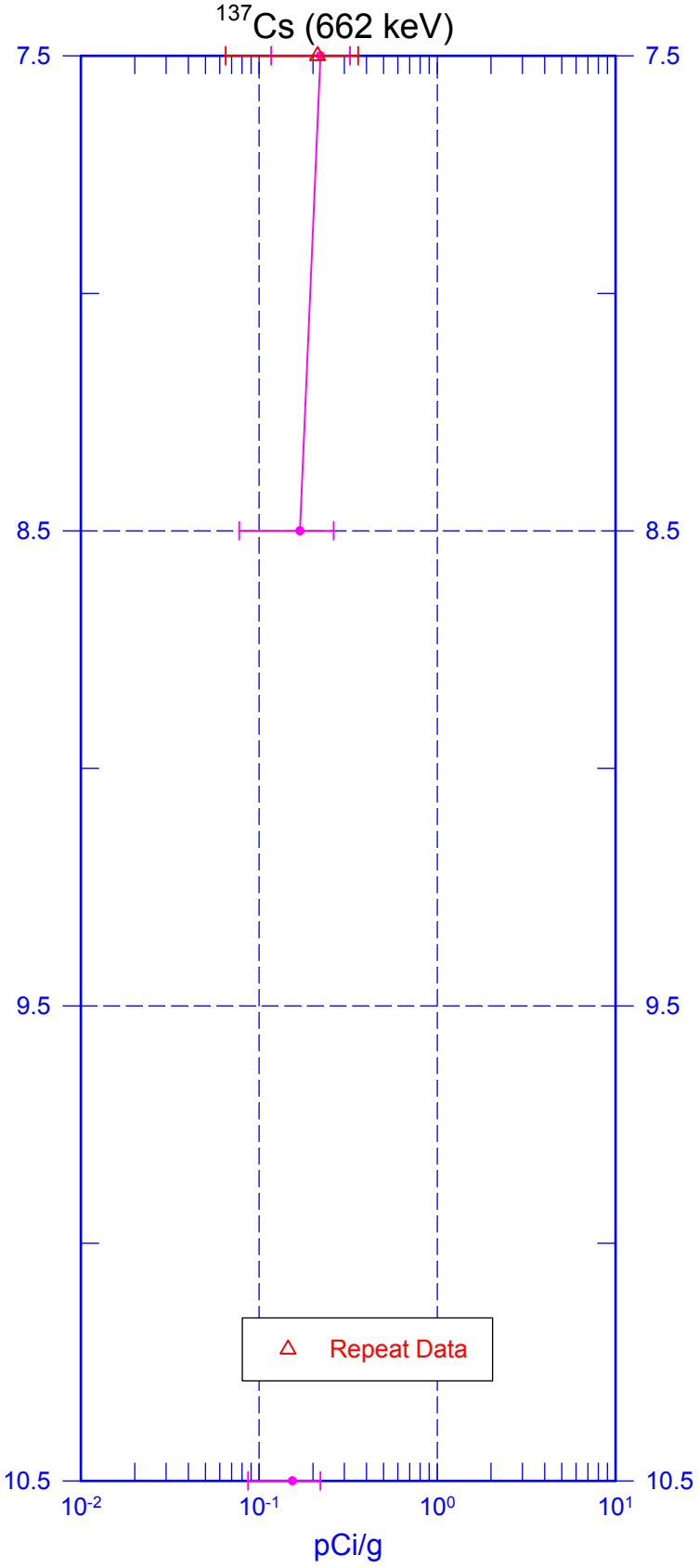
Reference - Top of Casing

299-W15-214 (A7512)
Man-Made Radionuclides RLS/SGLS Comparison



Zero Reference - Top of Casing

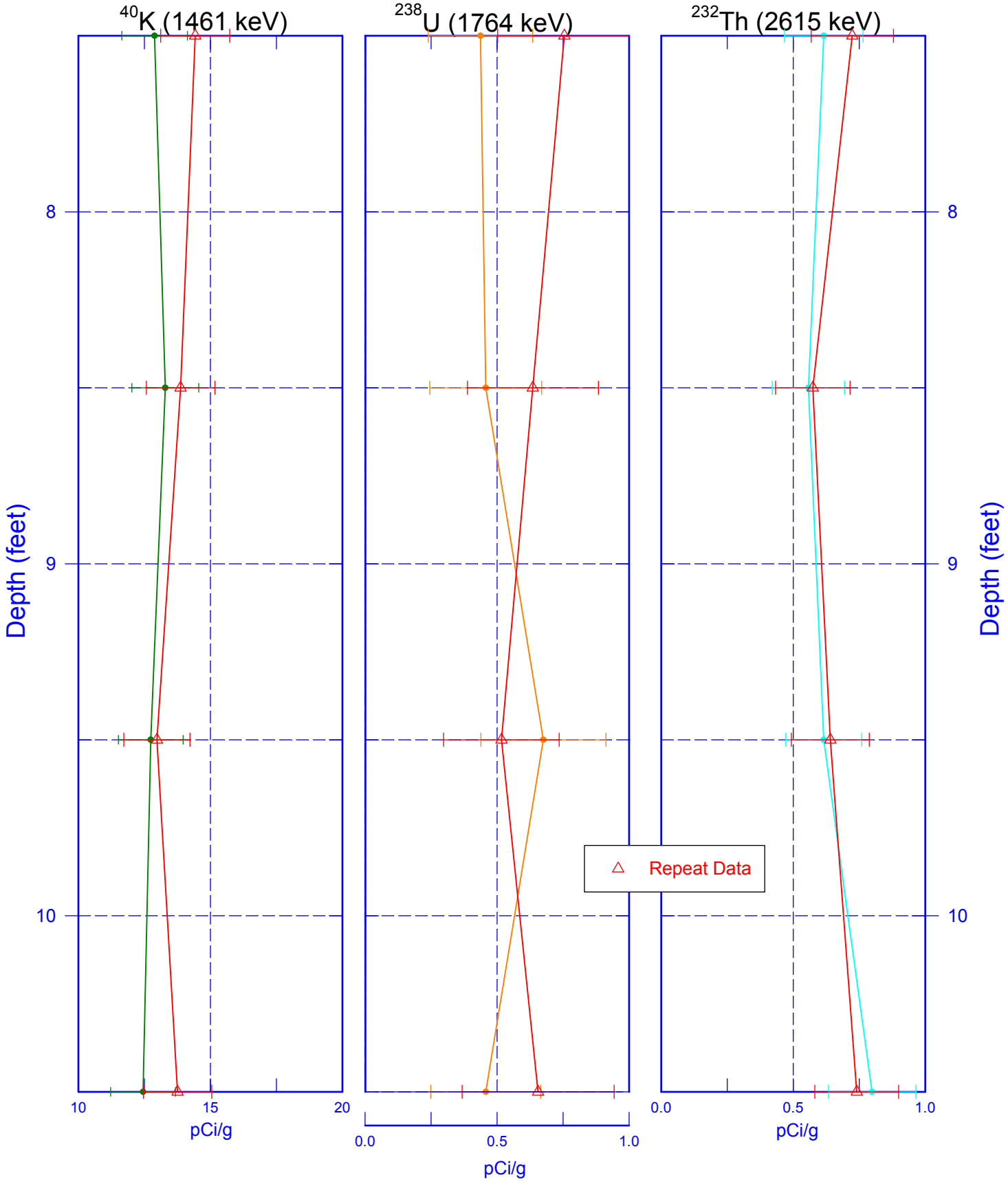
299-W15-214 (A7512)
Repeat Section of Man-Made Radionuclides



Zero Reference - Top of Casing

299-W15-214 (A7512)

Repeat Section of Natural Gamma Logs



Zero Reference - Top of Casing